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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,345	01/31/2002	James William Craig	13894	6008

293 7590 12/23/2005

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EXAMINER	
LU, KUEN S	
ART UNIT	**PAPER NUMBER**
2167	

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/059,345	CRAIG ET AL.	
	Examiner	Art Unit	
	Kuen S. Lu	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Reopened Prosecution

1. The Action is responsive to the Applicant's Pre-Brief Conference Request, filed on September 2, 2005.

2. In view of the Pre-Brief Conference Request, prosecution is hereby reopened. A new ground of rejection is set forth below. As to Applicant's arguments concerning rejections to claims 1-25, filed on September 2, 2005, has been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 17, the phrase "likely to be used to search for" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "likely"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5 and 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ejerhed (U.S. Publication 2002/0177991) in view of Cousins et al. (U.S. Patent 6,732,094, hereafter "Cousins").

As per Claims 1, 15 and 19, Ejerhed teaches the following:

"storing a plurality of possible responses" (See Page 3, [0035], lines 1-4 wherein Ejerhed's answers to a natural language question in a natural language database is equivalent to Applicant's storing a plurality of possible responses); and

"a plurality of" conditions, "one of said plurality of" conditions "associated with each of said plurality of possible responses, each of said plurality of" conditions "identifying at least one condition to be satisfied by a text query, to which its associated one of said plurality of responses is to be provided" (See Fig. 1 and Page 4, [0038]-[0040] where questions clause is analyzed to define conditions for associating constituents between question and database clause and identified to extract text from the natural language database to return as answer is equivalent to Applicant's a plurality of conditions, one of said plurality of" conditions associated with each of said plurality of possible responses, each of said plurality of" conditions identifying at least one condition to be satisfied by a text query, to which its associated one of said plurality of responses is to be provided).

Ejerhed does not explicitly teach the conditions be stored in the natural language text database.

However, Ejerhed teaches storing language clauses for answers to questions in the database as previous described.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to substitute defining the condition for retrieving answer by both defining and further storing the condition for retrieving answer because instead of controlling database size, the substituted teaching would have enhanced the system performance by the availability of quick Boolean search of conditions for expediting the retrieval of answers and eliminating the need for repeatedly defining the same conditions.

Ejerhed does not further explicitly teach that the conditions are Boolean expressions.

However, Cousins teaches representing a query condition, sample rule, by a Boolean expression to retrieve matched result from a database at col. 6, lines 35-43.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Cousins' teaching with Ejerhed reference by using Boolean expression to represent question condition because both references are devoted to retrieve answers from a database based on the evaluation of query conditions and the combination of the references would have enabled Ejerhed's system to establish Boolean expression to associate question and database clauses for enhancing the performance of Boolean search.

The combine teaching of the Cousins and Ejerhed references further teaches the following:

"receiving a text query" (See Ejerhed: Fig. 1, element 102 and Page 4, [0038] where a question clause is presented and analyzed is equivalent to Applicant's receiving a text query);

"for each of said plurality of possible responses, applying its associated Boolean expression to said received text query thereby determining if the associated Boolean expression is satisfied by said text query" (See Ejerhed: Fig. 1 and Page 4, [0038]-[0040] where questions clause is analyzed to define conditions for associating the constituents between question and database clause and identified to extract text from the natural language database to return as answer, and Cousins: at col. 6, lines 35-43 where a query condition, sample rule, is represented by a Boolean expression to retrieve matched result from a database is equivalent to Applicant's for each of said plurality of possible responses, applying its associated Boolean expression to said received text query thereby determining if the associated Boolean expression is satisfied by said text query); and

"presenting at least one of said plurality of possible responses, in response to said determining" (See Ejerhed: Fig. 1, element 208 and Page 4, [0040] where text comprising clauses satisfying a set of conditions is retrieved and returned is equivalent to the Applicant's presenting at least one of said plurality of possible responses, in response to said determining).

As per Claim 16, Ejerhed teaches "a computer readable medium storing data, said data comprising a plurality of responses" (See Page 11, [0011] and Page 3, [0035], lines 1-4 wherein Ejerhed's system and method for providing answers to a natural language question in a natural language database is equivalent to Applicant's a computer readable medium storing data, said data comprising a plurality of responses); and "at least one" identified "condition to be satisfied by a text query, to which its associated one of said plurality of responses is to be provided" (See Fig. 1 and Page 4, [0038]-[0040] where questions clause is analyzed to define conditions for associating constituents between question and database clause and identified to extract text from the natural language database to return as answer is equivalent to Applicant's is equivalent to Applicant's at least one identified condition to be satisfied by a text query, to which its associated one of said plurality of responses is to be provided).

Ejerhed does not explicitly teach that the at least one condition is identified by a Boolean expression.

However, Cousins teaches representing a query condition, sample rule, by a Boolean expression to retrieve matched result from a database at col. 6, lines 35-43.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Cousins' teaching with Ejerhed reference by using Boolean expression to represent question condition because both references are devoted to retrieve answers from a database based on the evaluation of query conditions and the combination of the references would have enabled Ejerhed's system

to establish Boolean expression to associate question and database clauses for enhancing the performance of Boolean search.

As per claims 17 and 25, Ejerhed teaches the following:

"organizing said information into a plurality of responses" (See Page 3, [0035], lines 1-4 wherein Ejerhed's answers to a natural language question in a natural language database is equivalent to Applicant's organizing said information into a plurality of responses); and

"for a particular one of said responses formulating at least one natural language query likely to be used to search for" (See Page 1, [0008] where a system is implemented to automatically find answers to a natural language question by means of a computer stored natural language text database).

Ejerhed does not explicitly teach "formulating a Boolean expression from said at least one of said at least one query, said Boolean expression satisfied by said at least one query".

However, Cousins teaches formulating a Boolean expression from said at least one of said at least one natural language query, said Boolean expression satisfied by said at least one query" (See col. 6, lines 35-43 where a query condition, sample rule, is represented by a Boolean expression to retrieve matched result from a database is equivalent to Applicant's formulating a Boolean expression from said at least one of said at least one query, said Boolean expression satisfied by said at least one query).

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Cousins' teaching with Ejerhed reference by using Boolean expression to represent question condition because both references are devoted to retrieve answers from a database based on the evaluation of query conditions and the combination of the references would have enabled Ejerhed's system to establish Boolean expression to associate question and database clauses for enhancing the performance of Boolean search.

The combine teaching of the Cousins and Ejerhed references further teaches the following:

"said Boolean expression in association with said particular one of said responses, so that said Boolean expression may later be applied to text representing said query to retrieve said particular one of said responses" (See Ejerhed: Fig. 1 and Page 4, [0038]-[0040] where questions clause is analyzed to define conditions for associating constituents between question and database clause and identified to extract text from the natural language database to return as answer, and Cousins: at col. 6, lines 35-43 where a query condition, sample rule, is represented by a Boolean expression to retrieve matched result from a database is equivalent to Applicant's storing said Boolean expression in association with said particular one of said responses, so that said Boolean expression may later be applied to text representing said query to retrieve said particular one of said responses).

Ejerhed does not explicitly teach the Boolean expressions be stored in the natural language text database.

However, Ejerhed teaches storing language text for answers to questions in the database as previous described.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to substitute defining the condition for retrieving answer by both defining and further storing the condition for retrieving answer because instead of controlling database size, the substituted teaching would have enhanced the system performance by the availability of quick Boolean search of conditions for expediting the retrieval of answers and eliminating the need for repeatedly defining the same conditions.

As per claim 2, the combined teaching of the Ejerhed and Cousins references further teaches "presenting comprises presenting at least plurality one of said plurality of possible response having its associated Boolean expression satisfied by said received text query" at (See Ejerhed: Page 4, [0040] where text portions whose clauses matching with conditions are extracted to return, and Cousins: col. 6, lines 35-43 where sample rule represented as Boolean expression is evaluated for retrieving query result is equivalent to Applicant's presenting comprises presenting at least plurality one of said plurality of possible response having its associated Boolean expression satisfied by said received text query).

As per claim 3, the combined teaching of the Ejerhed and Cousins references further teaches "plurality of possible responses each comprises information at least partially

responsive to said text query" (See Ejerhed: Page 4, [0040] where text portions whose clauses matching with conditions are extracted to return is equivalent to Applicant's plurality of possible responses each comprises information at least partially responsive to said text query).

As per claims 4 and 22, the combined teaching of the Ejerhed and Cousins references further teaches "each of said plurality of Boolean expressions comprises an expression to match a plurality of words within said text query" (See Cousins: col. 6, lines 35-43 where sample rule represented as Boolean expression is evaluated for retrieving query result, Ejerhed: Page 4, [0040] where text portions whose clauses matching with conditions are extracted to return is equivalent to Applicant's each of said plurality of Boolean expressions comprises an expression to match a plurality of words within said text query).

As per claims 5 and 23, the combined teaching of the Ejerhed and Cousins references further teaches "plurality of possible responses and said plurality of Boolean expressions are stored in a database" (See Ejerhed: Page 3, [0035], lines 1-4 wherein Ejerhed's answers to a natural language question in a natural language database, Cousins: col. 6, lines 35-43 where sample rule represented as Boolean expression is evaluated for retrieving query result is equivalent to Applicant's plurality of possible responses and said plurality of Boolean expressions are stored in a database).

As per claim 12, the combined teaching of the Ejerhed and Cousins references further teaches "presenting a plurality of additional responses associated with said at least one of said plurality of responses" (See Ejerhed: Page 4, [0040] where text portions whose clauses matching with conditions are extracted to return is equivalent to Applicant's presenting a plurality of additional responses associated with said at least one of said plurality of responses).

As per claim 13 and 24, the combined teaching of the Ejerhed and Cousins references further teaches "at least one of said plurality of responses comprises a link to additional information available by way of a computer network in communication with said computer" (See Ejerhed: Page 3, [0035] wherein Ejerhed's natural language text database for providing answers is a subset of the text information found in a plurality of web servers connected by internet where link is a tool to connect the servers is equivalent to Applicant's at least one of said plurality of responses comprises a link to additional information available by way of a computer network in communication with said computer).

As per claim 14, the combined teaching of the Ejerhed and Cousins references further teaches "at least some of said plurality of Boolean expressions comprise an identifier of a compound Boolean expression, to be resolved into a plurality of Boolean terms during said determining" (See Ejerhed: Page 3, [0035] wherein Ejerhed's natural language text database is equipped with various features to uniquely identify each

record in any tables, for example, ROWID of Oracle® RDBMS or primary keys is equivalent to Applicant's at least some of said plurality of Boolean expressions comprise an identifier of a compound Boolean expression, to be resolved into a plurality of Boolean terms during said determining).

As per claim 18, the combined teaching of the Ejerhed and Cousins references further teaches "comprising repeating said formulating at least one natural language query" (See Ejerhed: Page 1, [0009] natural language question clause can successfully find answer from a natural language text database).

As per claim 20, the combined teaching of the Ejerhed and Cousins references further teaches "wherein each of said Boolean expressions is formed from anticipated natural language queries for an associated answer (See Cousins: Fig. 5 and col. 6, lines 35-43 where Boolean expressions are formed for query, Ejerhed: Page 1, [0009] where natural language clauses are utilized to form question, associate question and database clauses and retrieve clauses as answers).

As per claim 21, the combined teaching of the Ejerhed and Cousins references further teaches "wherein said providing comprises presenting all those of said plurality of answers having their associated Boolean expression satisfied by said natural language query (See Cousins: col. 6, lines 35-43 where a query condition, sample rule, is represented by a Boolean expression to retrieve matched result from a database).

7. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ejerhed (U.S. Publication 2002/0177991) in view of Cousins et al. (U.S. Patent 6,732,094, hereafter "Cousins") as applied to claims 1-5, 12-17, 19 and 25 above, and further in view of Schabes et al. (U.S. Publication 2002/0123994, hereafter "Schabes").

As per claim 6, the combined teaching of the Ejerhed and Cousins references does not explicitly teach "determining further comprises calculating quality of match metrics for satisfied ones of said plurality of Boolean expressions, each of said quality of match metrics providing an indicator of a quality of match of a satisfied Boolean expression to said received query".

However, Schabes teaches "determining further comprises calculating quality of match metrics for satisfied ones of said plurality of Boolean expressions, each of said quality of match metrics providing an indicator of a quality of match of a satisfied Boolean expression to said received query" at Page 3, [0022] 4-12 where the degrees of match between query and matching context are scored to reflect the difference of the match.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Schabes' teaching with Cousins and Ejerhed's by calculating the quality of match of sub-expressions to measure how it is satisfied by the received query because both references teach evaluating query, searching query objects and matching received content with query and, further, the references teach using Boolean expressions for evaluating query objects and matches.

The combined reference would have enabled users of Cousins and Ejerhed's systems to accurately indicate the specific query objects and rank them accordingly such that the query can be performed flexibly with optimization.

As per claims 7 and 10, the combined teaching of the Schabes, Cousins and Ejerhed references teaches "each of said plurality of Boolean expressions may be expressed as a plurality of logically ORed sub-expressions, and one of said plurality Boolean expressions is satisfied if one of its sub-expressions is satisfied" (See Cousins: Fig. 5, element 210 where Boolean expressions are grouped and evaluated); and "quality of match metrics are calculated by calculating an indicator of a quality of match for sub-expressions satisfied by said text query" (See Schabes: Page 3, [0022] 4-12 where the degrees of match between query and matching context are scored to reflect the difference of the match).

As per claim 8, the combined teaching of the Schabes, Cousins and Ejerhed references teaches "presenting is based on a said quality of match metrics" (Schabes: Fig. 18, elements 514-515 and Page 19, [0198] where output of the match list is ranked).

As per claim 9, the combined teaching of the Schabes, Cousins and Ejerhed references teaches "calculating degree of match metrics for un-satisfied ones of said plurality of Boolean expressions, each of said degree of match metrics providing an

indicator of a degree of match of an un-satisfied ones of said plurality of Boolean expressions to said received text query" (See Schabes: Fig. 18, elements 500-515 and Page 19, [0197]-[0198] where select documents satisfying Boolean expression and matched to set the rankings which is a calculation of match metrics indicating the degree of satisfying the Boolean expression, and on the other hand, the metrics indicates the degree of not satisfying the un-satisfied Boolean expression to the received query).

As per claim 11, the combined teaching of the Schabes, Cousins and Ejerhed references teaches "each of said sub-expression comprises a plurality of logically ANDed terms and each of said degree of match metrics is calculated by determining a number of terms in any sub-expression satisfied by said received text query" (See Schabes: Figs. 19A-19B and Page 19, [0198], lines 5-16 where a plurality of AND operators to logically AND the sub-expressions and each of said degree of match metrics is calculated by determining a number of terms in any sub-expression satisfied by said received text query).

Conclusions

8. The prior art made of record

A. U.S. Patent 6,341,277

B. U.S. Publication 2002/0123994

C. U.S. Patent 6,571,239

F. U.S. Publication 2002/0177991

G. U.S. Patent 6,732,094

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

D. U.S. Patent 6,363,373

E. U.S. Patent 6,665,666

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is (571) 272-4114. The examiner can normally be reached on Monday-Friday (8:00 am-5:00 pm). If attempts to reach the examiner by telephone pre unsuccessful, the examiner's Supervisor, Jean R. Homere, Esq. can be reached on (571) 272-3780. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for Page 13 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 886-217-9197 (toll-free).

Kuen S. Lu

Patent Examiner

December 20, 2005

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER